

Martin State Airport (MTN) Airport Noise Zone (ANZ) Update Public Workshop & Hearing

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION



Virtual Public Workshop Plan & Procedures

Tonight's virtual public workshop will operate similarly to an in-person meeting, and will **be recorded**.

Public Workshop Procedures:

- The workshop will begin with a brief presentation followed by an opportunity for attendees to ask MDOT MAA questions about the study.
- To ask a question:
 - Use the “Raised Hand” feature on the screen and an administrator will unmute your microphone, or
 - You can ask (type) the question in the chat box
- We will take questions this evening until 6:55 p.m.
- If you experience technical difficulties:
 - Please let us know in the chat box
 - Log off, and log back in
 - We recommend having only one web browser open for the duration of the meeting, and to close all other programs on your computer, if possible.



Agenda

- MDOT MAA Introduction
- Public Workshop
 - Presentation
 - Q&A
- Break
- Public Hearing (7PM-8PM)

Maryland Airport Noise Zone (ANZ) Regulations

- Maryland Environmental Noise Act of 1974
 - Intended to minimize aircraft noise impacts and prevent incompatible land development around airports
- Code of Maryland Regulations (COMAR) requires MDOT MAA to complete an ANZ update for MTN every five years
- Noise impact determined by Day-Night Average (DNL/Ldn) composite contours:
 - Base year
 - 5-year post certification forecast
 - 10-year post certification forecast
- The ANZ represents the largest extent of the annual contours for each study year

ANZ Update Scope and Process

- Establish Stakeholder Advisory Committee (SAC)
- Prepare base year, 5-year, 10-year forecast contours
- Compile composite Airport Noise Zone (ANZ)
- Prepare inventory of existing land use
- Update the Noise Abatement Plan
- Obtain approval from MAC to circulate proposed ANZ Update
- **Conduct public workshop/hearing**
- Submit final ANZ to MAC for approval and MDOT MAA Executive Director certification

Completed



Airport Noise Zone (ANZ) Study Update Elements

Airport Noise Zone (ANZ)	Noise Abatement Plan (NAP)
<p>Means to identify and control incompatible land development around MTN</p> <p>Comprised of the largest extent of the annual Day-Night Average (DNL/Ldn) composite contours for each study year (2019 base, 2025 and 2030 forecast)</p>	<p>Prescribes measures to monitor and reduce or eliminate impacted land use areas to the extent feasible, while maintaining efficient airport operations</p>

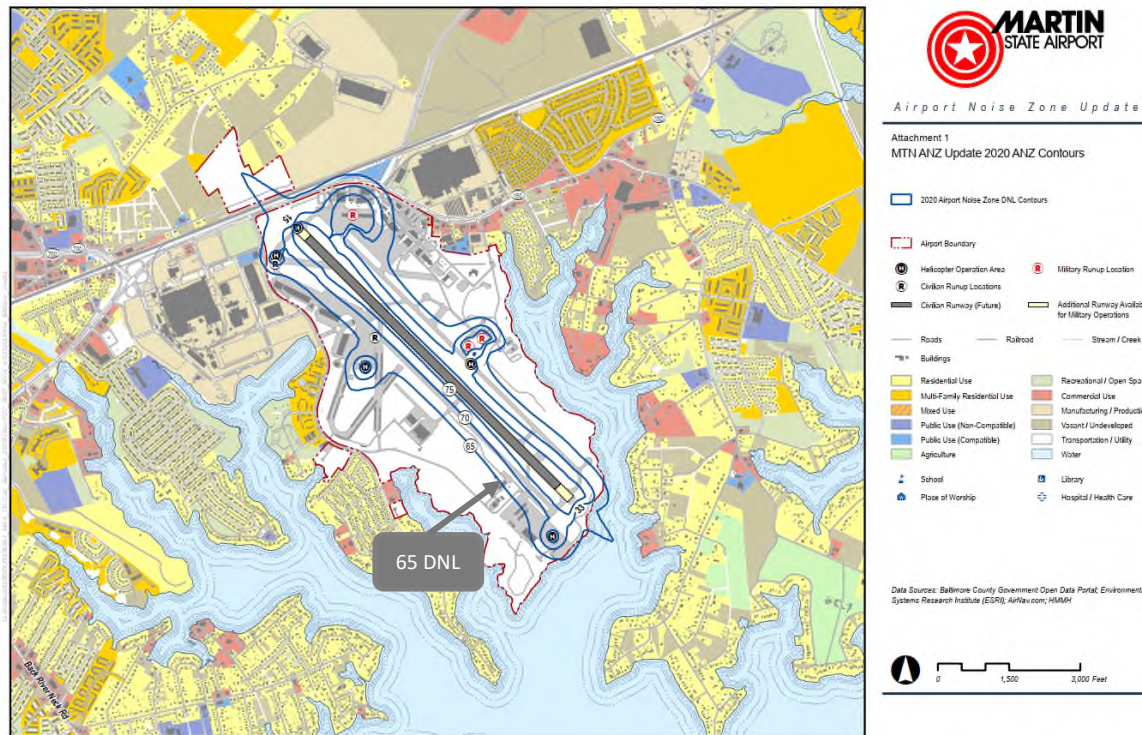


Stakeholder Advisory Committee (SAC)

Roles and Responsibilities

- The SAC serves in an advisory role to the MDOT MAA solely for purposes of the MTN ANZ update process
 - Review of study inputs, assumptions, analyses, documentation, etc.
 - Input, advice, and guidance related to Noise Abatement Plan
- SAC members are expected to provide two-way communication between the SAC and their organizations / constituents
- MDOT MAA shall respect and consider SAC input, but retains overall responsibility for the MTN ANZ update

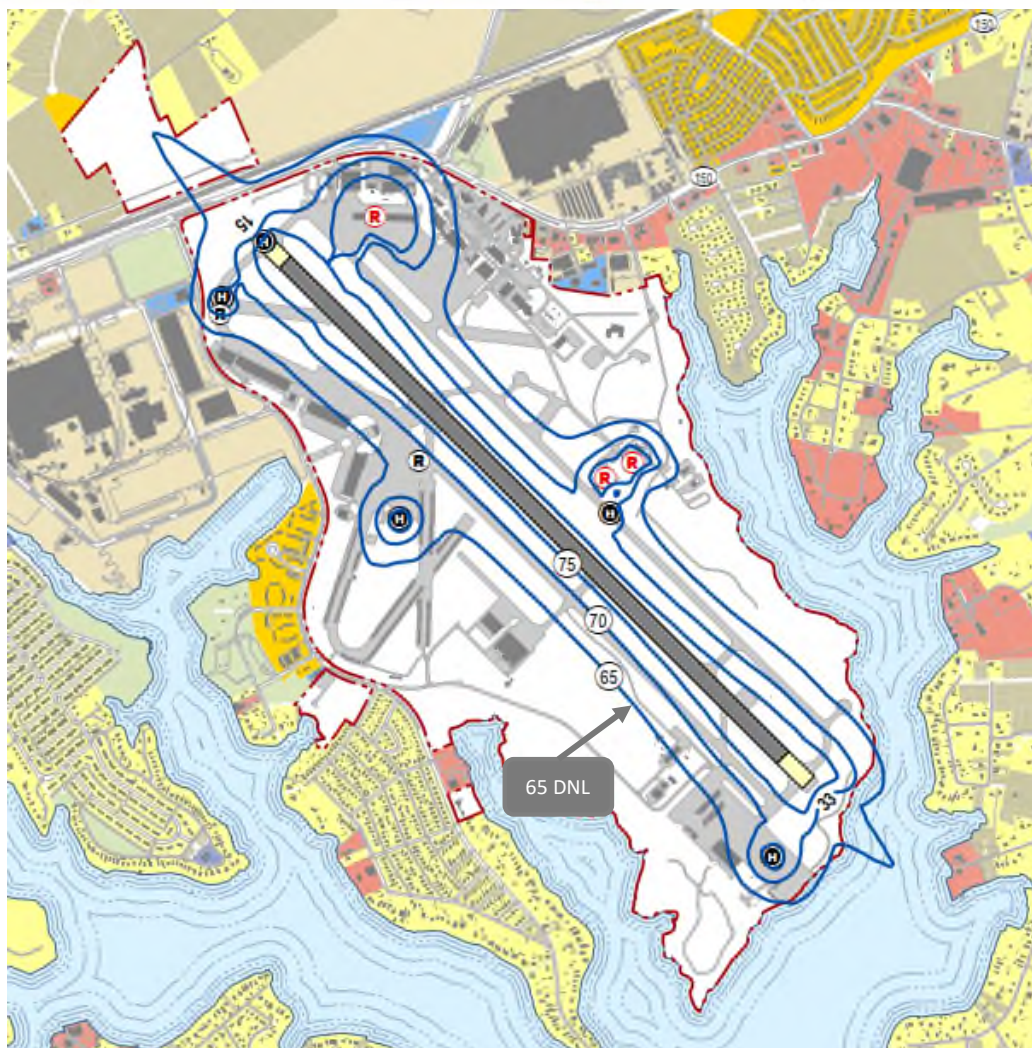
2020 MTN ANZ Contours



Noise contours modeled for existing (2019) and future (2025 and 2030) scenarios

2020 ANZ is 411 acres

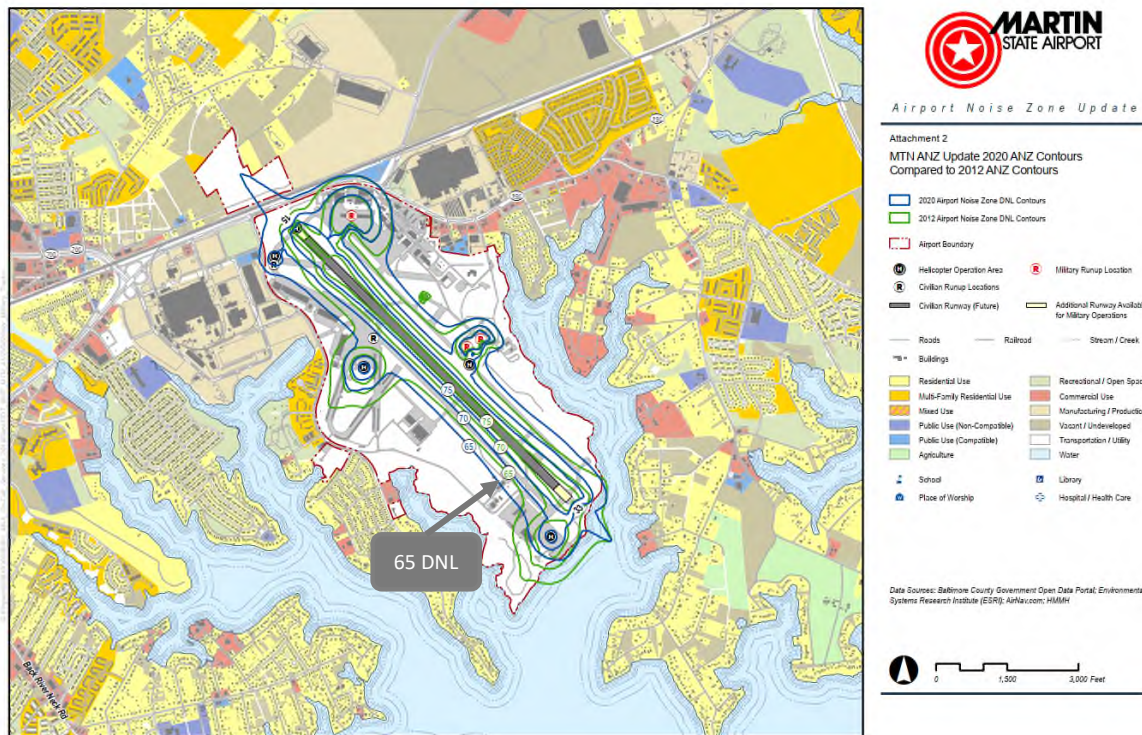
- 96% on MDOT MAA property
- Remains entirely over compatible land uses (no impacts to noise-sensitive land uses)



2020 MTN ANZ

- 2020 Airport Noise Zone DNL Contours
- Airport Boundary
- Helicopter Operation Area
- Civilian Runup Locations
- Civilian Runway (Future)
- Additional Runway Available for Military Operations
- Roads
- Railroad
- Stream / Creek
- Buildings
- Residential Use
- Multi-Family Residential Use
- Mixed Use
- Public Use (Non-Compatible)
- Public Use (Compatible)
- Agriculture
- Recreational / Open Space
- Commercial Use
- Manufacturing / Production
- Vacant / Undeveloped
- Transportation / Utility
- Water
- School
- Place of Worship
- Library
- Hospital / Health Care

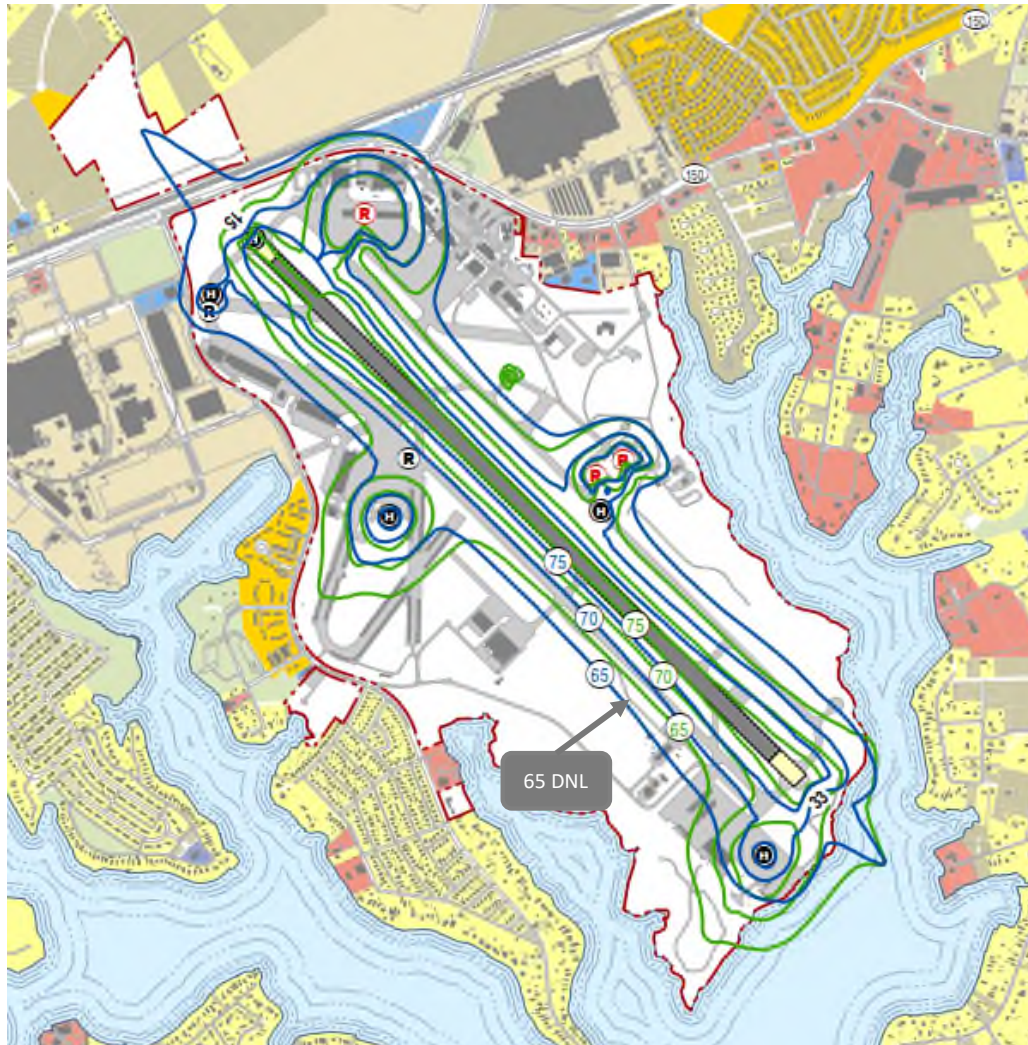
Comparison of 2020 ANZ to Previous ANZ



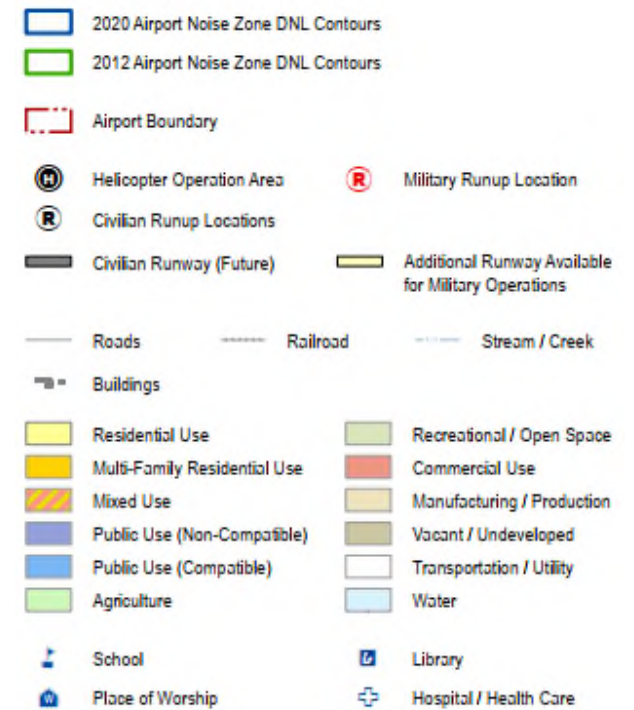
- 2020 ANZ is 4% larger than 2012 ANZ

Changes attributable to:

- Increased operations
- Future configuration of the runway layout for Runway 15/33 (may reconfigure each end of the existing runway for civilian aircraft)
- Noise model updates

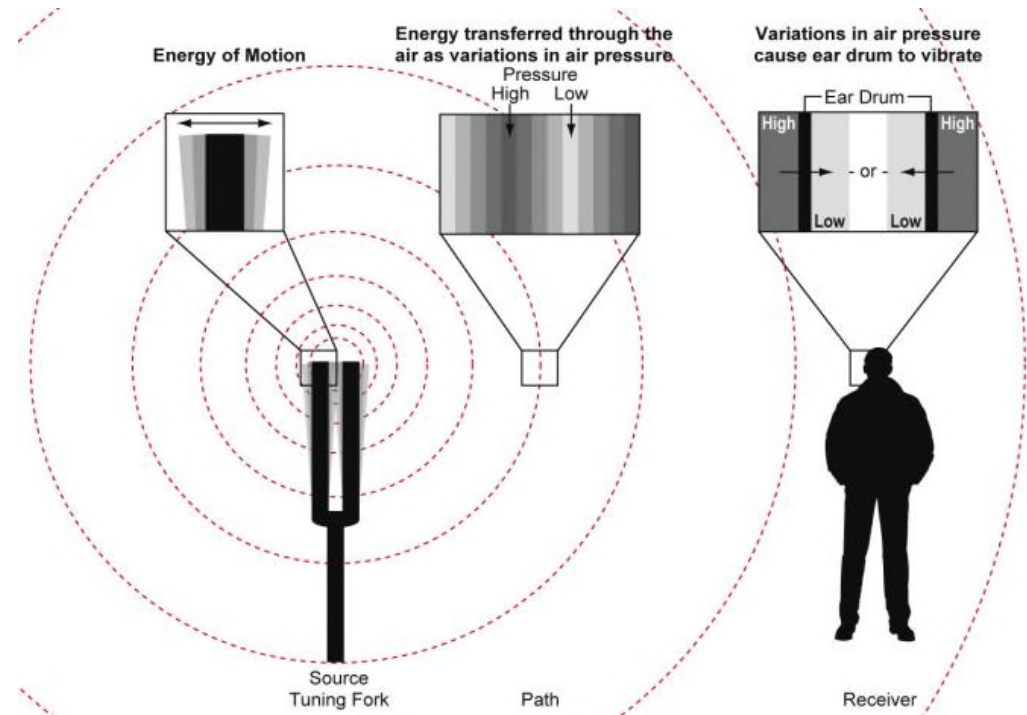


Comparison of 2020 ANZ to Previous ANZ



Noise Fundamentals: Sound vs. Noise

- Sound is pressure variation our ears can detect
 - An objective quantity
- Noise is “unwanted sound”
 - A subjective quantity
- We relate sound and noise by considering effects
 - Annoyance
 - Speech interference
 - Sleep disruption



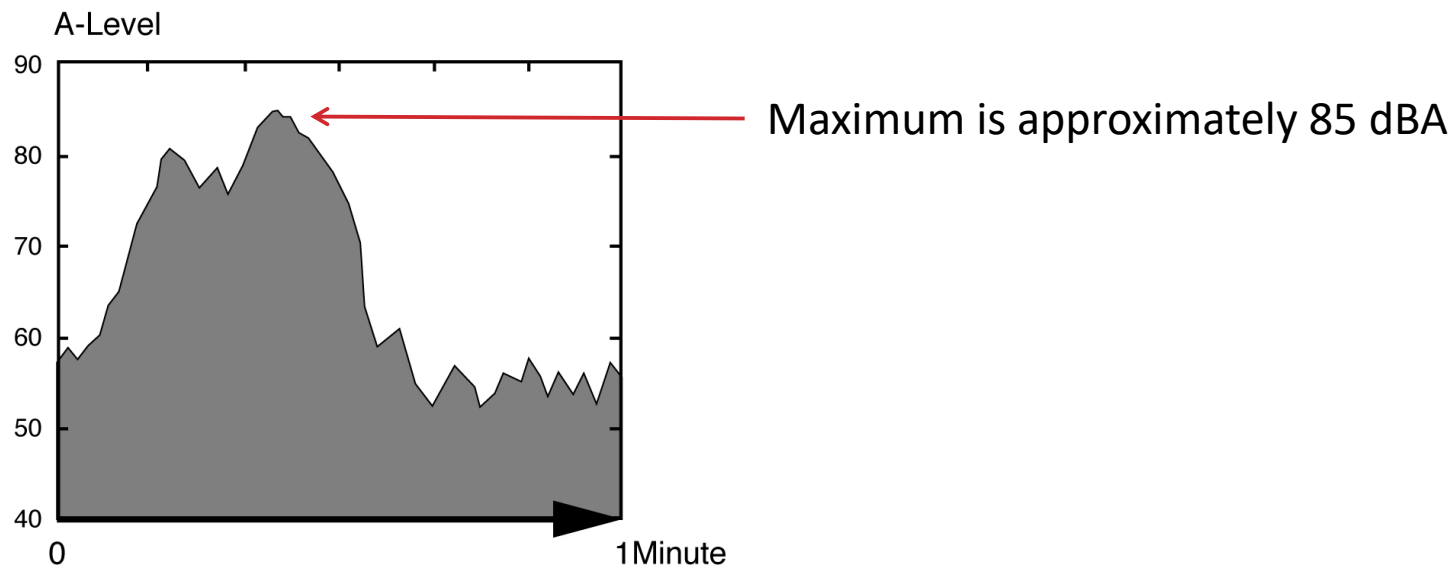
Noise Fundamentals: The Decibel Scale

- We use a *logarithmic* scale – *decibels, or dB* to express sound levels and noise levels
- *Why?*
 - We hear sound pressures over a HUGE range
 - Decibels compress this range to match the way we interpret sound pressures
 - 0 to 140 dB
 - -000000003 to -03 lbs. per sq. inch (psi)
- *We “hear” in decibels.*

“Energy”	dB	Common sounds
100,000,000,000,000	140	Near a jet engine at start of takeoff
10,000,000,000,000	130	Threshold of pain
1,000,000,000,000	120	On stage at a loud rock concert
100,000,000,000	110	
10,000,000,000	100	Jack hammer at 6 feet
1,000,000,000	90	
100,000,000	80	Vacuum cleaner at user’s ear
10,000,000	70	Vacuum cleaner at 10 feet
1,000,000	60	Normal speech
100,000	50	
10,000	40	Quiet residential area
1,000	30	
100	20	Whisper
10	10	
1	0	Threshold of hearing
0.1	-10	

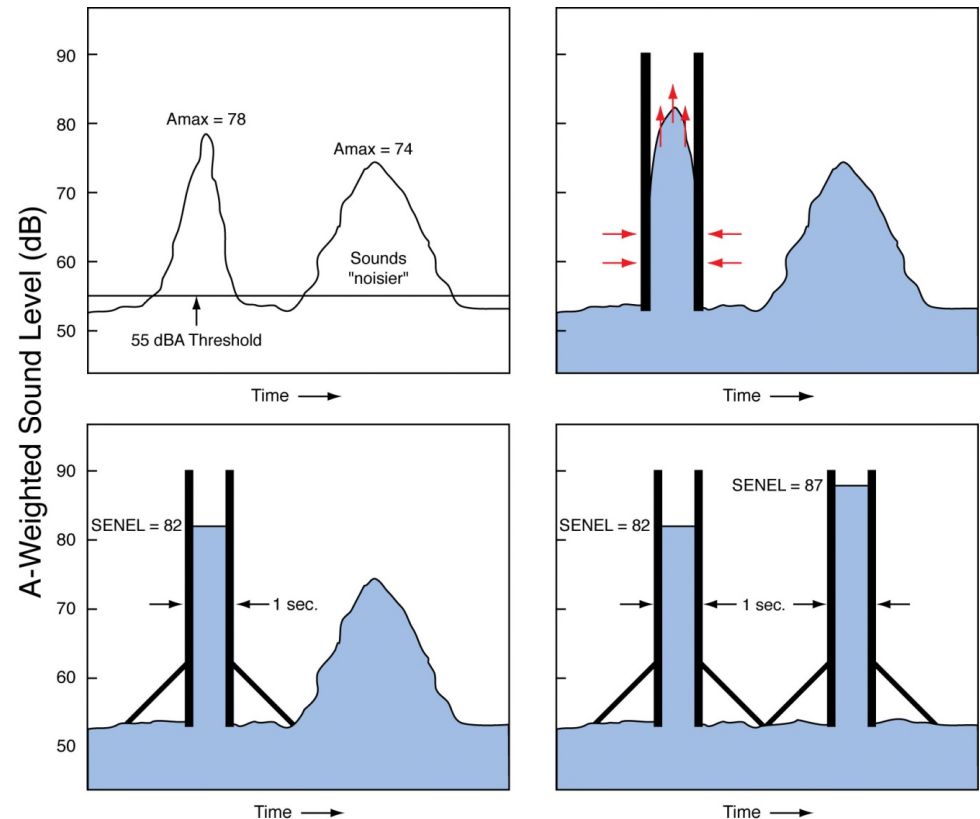
Noise Fundamentals: Single Event Noise Metrics

- The simplest way to describe a discrete noise “event” is its maximum sound level, abbreviated as Lmax



Noise Fundamentals: Single Event Noise Metrics

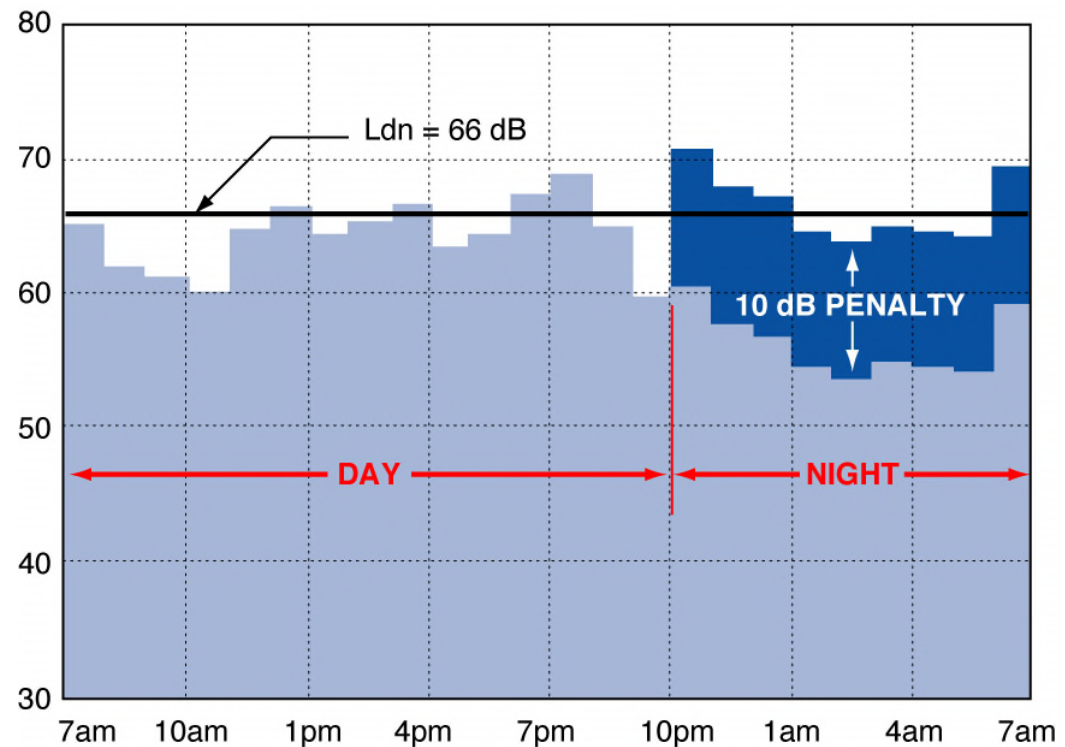
- Sound Exposure Level (SEL) measures the total “noisiness” of an event by taking duration into account
- Duration matters: A longer event may seem “noisier,” even if it has a lower or equal maximum level



Noise Fundamentals: Cumulative Exposure Metric

Day-Night Average Level (DNL)

- Describes 24-hour exposure
- Noise from 10 pm to 7 am is factored up by 10 dB
 - “Penalty” is equal to counting each night aircraft 10 times
- DNL is abbreviated as Ldn (as defined in COMAR)



COMAR Requires Modeling

- **Sec. 11.03.03.02.**

- *§C. Development of noise contours of equal noise exposure are to be determined using a prediction method in accordance with the procedures of §D, below. Measurements, undertaken in accordance with the procedure of §E of this regulation, may be used to confirm the locations of contours of equal noise exposure.*

Source: <http://www.dsd.state.md.us/comar/comarhtml/11/11.03.03.02.htm>

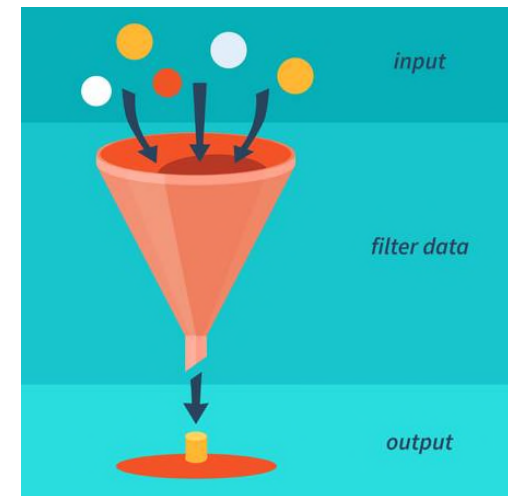


Noise Modeling Process

- Study years for this ANZ Update: 2019, 2025, 2030
- Analyze existing radar data
- Base Year (2019)
 - Determined base year AEDT inputs
 - Developed base year conditions and DNL contours
- Forecast Years (2025 and 2030)
 - Determined 5 and 10-year forecast AEDT inputs
 - Use of operations forecasts as published in the 2018 FAA Terminal Area Forecast
 - Developed 5-year and 10-year forecast DNL Contours

Noise Model Inputs

- Aviation Environmental Design Tool (AEDT)- noise modeling software
- AEDT requires input data in three categories:
 1. Aircraft noise and performance data
 2. Airport physical inputs
 3. Aircraft operational data
 - Number of aircraft operations
 - Aircraft fleet mix
 - Day-night split of operations
 - Runway utilization
 - Flight track geometry and utilization



Physical Input Requirements

- Runway layout (including displaced landing or takeoff thresholds)
- Flight tracks
- Airport elevation
- Airport weather
 - Temperature
 - Relative humidity
- Related requirements:
 - runway use rates
 - flight track use rates



Photo Source:

<https://www.martinstateairport.com/content/airserv/photos/genphotos.html>



Airport Noise Zone Update

Figure 1
Existing (2019) Runway Layout

- Helicopter Operation Area
- Military Runup Location
- Civilian Runup Locations
- Civilian Runway
- Additional Runway Available for Military Operations
- Airport Boundary
- Roads
- Railroad
- Stream / Creek

Data Sources: Baltimore County Government Open Data Portal; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH





Airport Noise Zone Update

Figure 2
Five-year (2025) and Ten-year (2030)
Runway Layout

- Helicopter Operation Area
- Civilian Runup Locations
- Civilian Runway (Future)
- Additional Runway Available for Military Operations
- Airport Boundary
- Roads
- Railroad
- Stream / Creek
- Military Runup Location

Data Sources: Baltimore County Government Open Data Portal; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

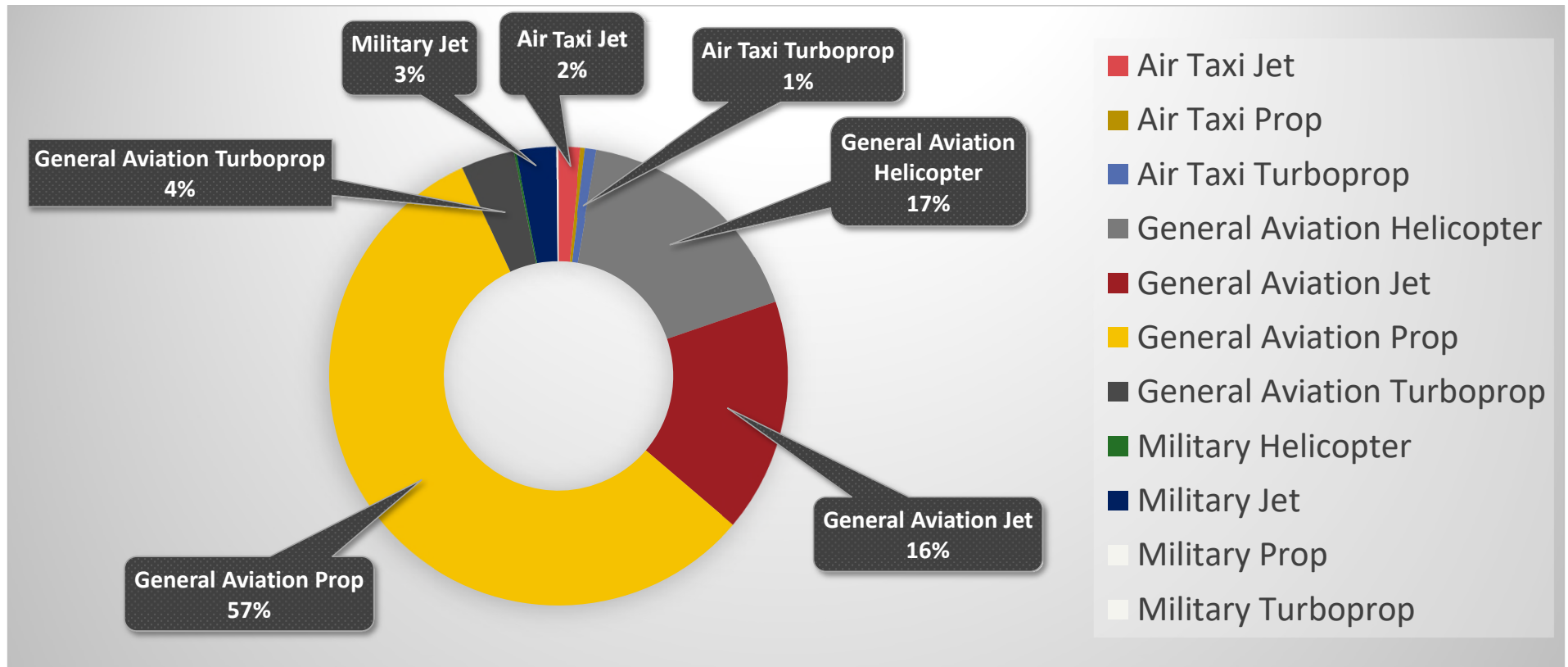


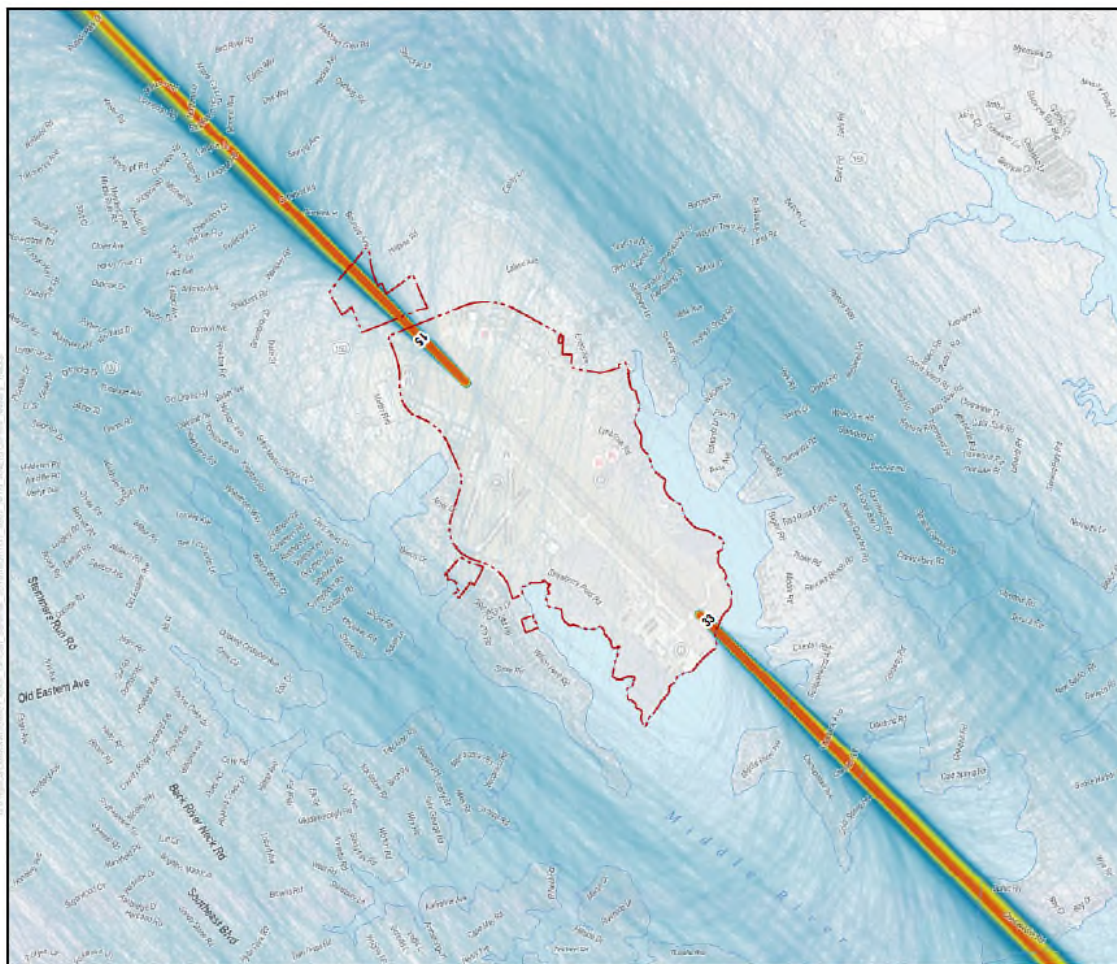
Baseline and Future Operations Levels

Year	Itinerant Operations				Local Operations		Total
	Air Carrier	Air Taxi	General Aviation	Military	General Aviation	Military	
2019	0	2,173	37,153	1,893	38,756	645	80,620
2025	0	2,173	38,021	1,893	40,506	645	83,238
2030	0	2,173	38,761	1,893	42,023	645	85,495

Source: FAA, 2018 Terminal Area Forecast (TAF)

Distribution of Operations by Aircraft Type





Airport Noise Zone Update

Figure 3
Modeled Civilian Fixed-Wing
Arrival Flight Tracks

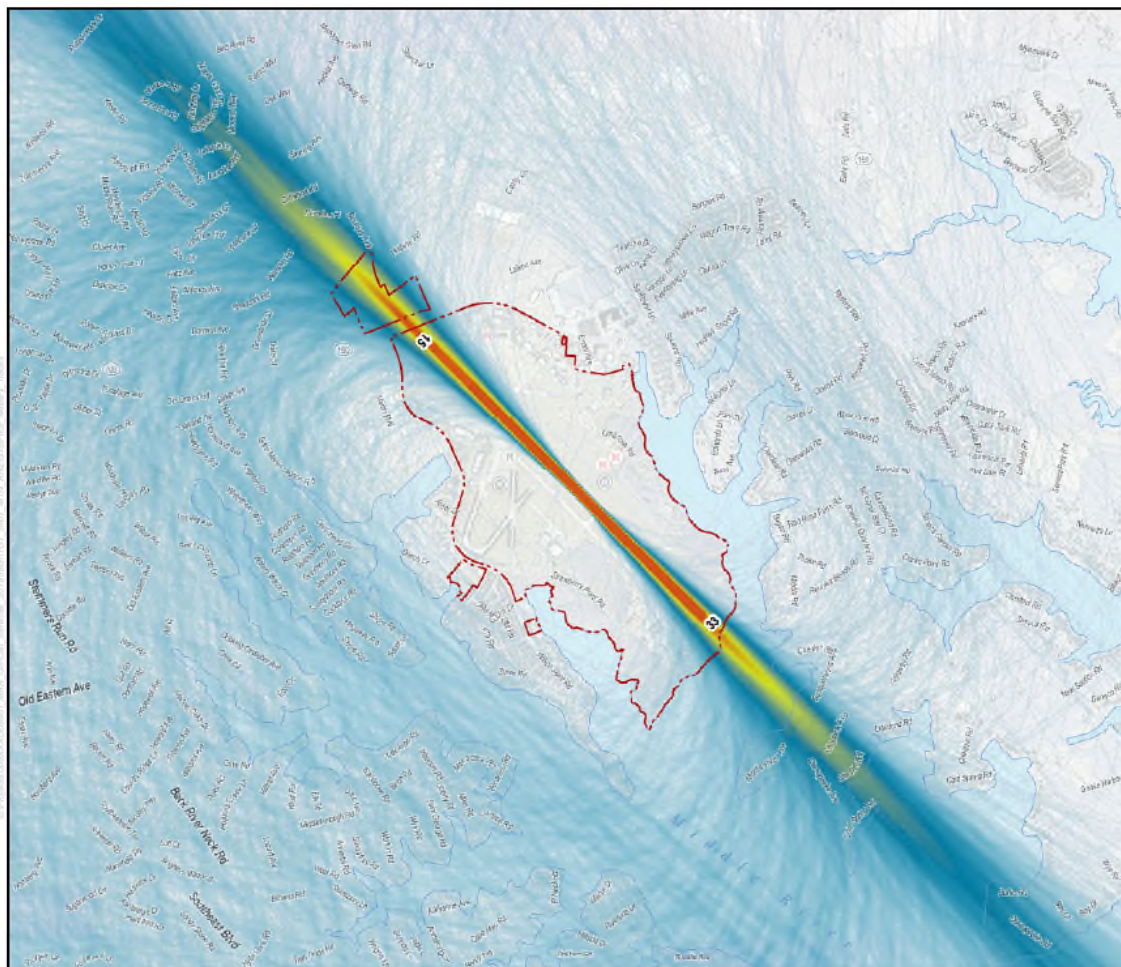
- Helicopter Operation Area
- Civilian Runup Locations
- Civilian Runway
- Additional Runway Available for Military Operations
- Airport Boundary
- Roads
- Railroad
- Stream / Creek
- Buildings
- Military Runup Location

Flight Track Density - 7,531 Flight Tracks

Low Medium High

Data Sources: Baltimore County Government Open Data Portal; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH; MDOT MAAANOMS





Airport Noise Zone Update

Figure 4
Modeled Civilian Fixed-Wing
Departure Flight-Tracks

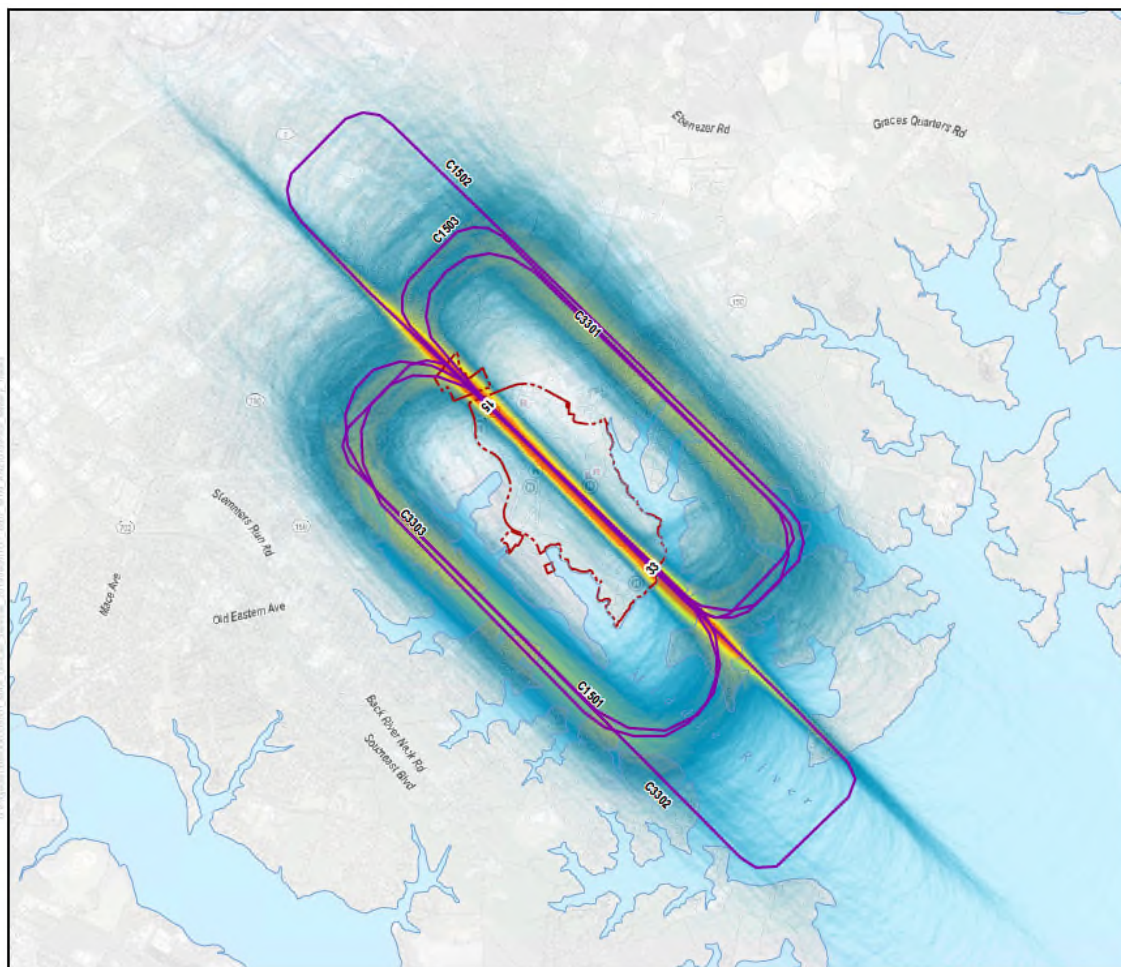
- Helicopter Operation Area
- Civilian Runup Locations
- Civilian Runway
- Additional Runway Available for Military Operations
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- Stream / Creek
- Buildings
- Military Runup Location

Flight Track Density - 6,768 Flight Tracks

Low Medium High

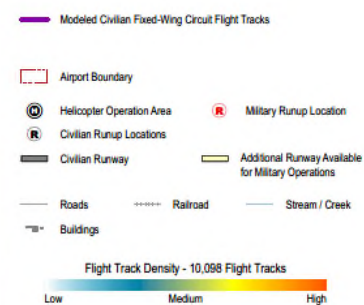
Data Sources: Baltimore County Government Open Data Portal; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH; MDOT MAAANDMS





Airport Noise Zone Update

Figure 5
Modeled Civilian Fixed-Wing Circuit Flight Tracks



Data Sources: Baltimore County Government Open Data Portal; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH; MDOT MAAANOMS





MTN Noise Abatement Plan

- The NAP is comprised of two parts
 - Efforts MDOT MAA is taking to mitigate noise
 - Voluntary aircraft operating procedures
- Includes multiple elements
 - Prescribed noise abatement procedures
 - Process for addressing community noise complaints
 - Airport Zoning Permitting and Board of Airport Zoning Appeals* Procedure

** BAZA Members appointed by the Governor*

Updated Noise Abatement Plan Summary

Noise Abatement

- **Visual Flight Rules (VFR) and Instrument Flight Rules (IFR) Departures**
 - VFR Piston-engine Aircraft: Runway 15/33 – Unless otherwise instructed by ATC, aircraft fly runway heading to 1000' Mean Sea Level (MSL) prior to turning to the ATC approved on-course heading or crosswind leg of the traffic pattern.
 - VFR Turbine Powered Aircraft: Runway 15/33 – Unless otherwise instructed by ATC, aircraft shall fly runway heading to 1,500' MSL prior to turning to the ATC approved, on-course heading or crosswind leg of the traffic pattern.
 - VFR Helicopter Departures: Unless operating under a Letter of Agreement (LOA) with MTN ATC specifying otherwise, helicopters shall climb to 500' AGL on initial departure heading before turning on-course.
 - All IFR Departures: IFR departures shall be accomplished in accordance with ATC direction or clearance.
- **VFR and IFR Arrivals and Traffic Patterns**
 - VFR and IFR aircraft approach should, to the maximum extent feasible, maintain the highest practical altitude, commensurate with flight and ATC procedures in order to minimize aircraft noise exposure to communities underlying the final approach courses.
- **Closed Traffic Patterns**
 - A left-hand traffic pattern shall be used at MTN unless otherwise directed by ATC. Piston fixed-wing aircraft should fly runway heading until reaching 1,000' MSL prior to turning to the crosswind leg of the traffic pattern. Turbine aircraft should fly runway heading until reaching 1,500' MSL prior to turning to the crosswind leg of the traffic pattern.
- **Touch-and-Go or Practice Approaches**
 - No touch-and-go and/or practice approaches or practice landings are permitted between 10:00 p.m. to 6:00 a.m. daily unless approved by MTN Operations and Maintenance staff.

Noise Mitigation

- Airport Noise Zone
- Control of Incompatible Development
- Noise Concerns
- Maryland Air National Guard (MDANG) Noise Barriers
- Aircraft Maintenance Engine Run-up Areas



MTN Noise Abatement Plan

- Originally adopted in 1984, updated in 1987, reviewed and approved with no changes in 2012.
- Includes:
 - Airport Noise Zone
 - Zoning permit and appeals process
 - Complaint procedures
 - MDANG noise barriers
 - Aircraft maintenance engine run-up areas
 - Departure and arrival traffic procedures
 - Closed traffic patterns
 - “Touch-and-Go” restrictions



Public Notice and Review

Proposed Action (updating COMAR) was published in the Maryland Register.

Public notice was provided via posting in:

- Baltimore Sun
- Dundalk Eagle
- The Avenue News

SAC members and Maryland State and Local elected officials were notified directly.

Document is available for public review electronically at MDOT MAA Community Relations website:

www.maacommunityrelations.com

Public Comments

- During the Public Hearing each individual will be allocated two minutes to make a comment.
- Written statements, in lieu of or in addition to an oral comment at the hearing, may be submitted to Mr. Bruce Rineer at BRineer@bwiairport.com until 5:00 p.m. on February 14, 2021



QUESTIONS AND ANSWERS



BREAK
PUBLIC HEARING WILL BEGIN AT 7:00 PM



Virtual Public Hearing Plan & Procedures

Tonight's virtual public hearing will **be recorded**.

Public Hearing Procedures:

- At 7:00 pm, the MDOT MAA Hearing Officer will formally begin the Public Hearing.
- During the hearing, comments will be heard and recorded, however comments/questions will not be responded to during the hearing.
- To make an official comment, please raise your hand virtually. Commenters will be called upon to speak in the order that hands are raised. Each commenter will be allotted two minutes to speak.
- During the Public Hearing, a Court Reporter will record all public comments.
- Following each comment, the Hearing Officer will thank the speaker and the next commenter will be called.

If you experience technical difficulties:

- Please let us know in the chat box
- Log off, and log back in
- We recommend having only one web browser open for the duration of the meeting, and to close all other programs on your computer, if possible.



PUBLIC HEARING

(COMMENTS LIMITED TO TWO MINUTES PER PARTICIPANT)